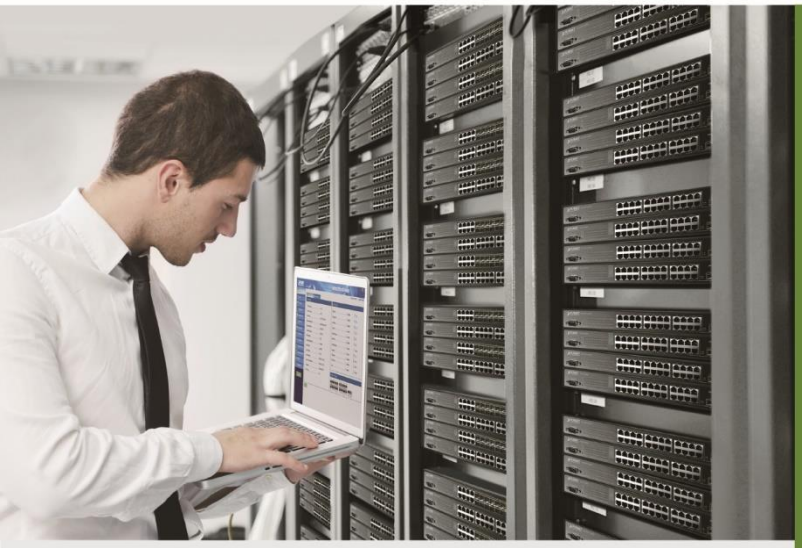
PLANET
Networking & Communication

User's Manual

802.11AX Wi-Fi 6E Tri-band Wireless PCI Express Adapter (Intel)

▶ WTL-2400AXE



www.PLANET.com.tw

Trademarks

Disclaimer

PLANET Technology does not warrant that the hardware will work properly in all environments and applications, and makes no warranty and representation, either implied or expressed, with respect to the quality, performance, merchantability, or fitness for a particular purpose.

PLANET has made every effort to ensure that this User's Manual is accurate; PLANET disclaims liability for any inaccuracies or omissions that may have occurred.

Information in this User's Manual is subject to change without notice and does not represent a commitment on the part of PLANET. PLANET assumes no responsibility for any inaccuracies that may be contained in this User's Manual. PLANET makes no commitment to update or keep current the information in this User's Manual and reserves the right to make improvements to this User's Manual and/or to the products described in this User's Manual at any time without notice.

If you find information in this manual that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

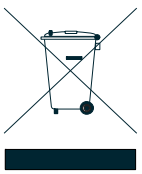
FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

WEEE Warning



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

User Manual of PLANET Wi-Fi 6E Desktop PCIe Adapter

Models: WTL-2400AXE

Revision: 1.0 (September 2025)

Part No.: EM-WTL-2400AXE_v1.0

Table of Contents

Chapter 1 Introduction

Thank you for purchasing PLANET WTL-2400AXE tri-band desktop adapter. It is designed with the Intel® AX210 2×2 controller to provide Wi-Fi 6E connectivity across 2.4, 5 and 6 GHz bands with 160 MHz channel support, OFDMA/MU-MIMO and WPA3-SAE security. This Quick Installation Guide (QIG) helps you complete the physical installation, driver setup, and initial wireless/Bluetooth® connection.

Upgrade Desktops to Fast, Low-Latency Wi-Fi 6E

PLANET **WTL-2400AXE** is a tri-band 802.11ax **Wi-Fi 6E** PCI Express x1 wireless adapter powered by the Intel® **AX210** chipset. It brings next-generation connectivity to desktop PCs with **2×2 MIMO** and **OFDMA** for high efficiency and lower latency. The adapter supports speeds **up to 574 Mbps on 2.4 GHz** and **up to 2400 Mbps on 5/6 GHz** for cleaner spectrum and reduced interference in dense environments.

With **Bluetooth® 5.2** (via onboard USB interface), users can connect keyboards, mice, headsets and other peripherals without a separate dongle, simplifying the workspace.

Designed for easy deployment in business and home offices, WTL-2400AXE includes two external **5 dBi antennas** to enhance signal coverage. It operates seamlessly on **Windows® 10/11 and Linux Kernel 5.10+**, making it an ideal upgrade for high-bandwidth applications such as 4K/8K streaming, cloud collaboration, AR/VR trials and online gaming.

Hassle-free Installation for Tri-Band Wi-Fi

WTL-2400AXE uses a standard **PCI Express x1** interface for Wi-Fi data and an internal **USB** connection for Bluetooth functionality. Once installed, your desktop gains simultaneous access to **2.4, 5 and 6 GHz** bands under the Wi-Fi 6E standard, maximizing spectrum choices and minimizing contention with legacy devices.

Wi-Fi 6E Technology Highlights

The WTL-2400AXE brings the latest **Wi-Fi 6E (802.11ax)** to desktops with **2×2 MIMO**, **OFDMA**, **MU-MIMO**, **BSS Coloring**, **160 MHz channel width** and **WPA3-SAE** security. It delivers up to **574 Mbps (2.4 GHz)** and **2400 Mbps (5 and 6 GHz)** performance and additionally opens the **6 GHz** band to reduce interference and latency in high-density environments.

Multiple OS Support

The WTL-2400AXE works seamlessly with **Windows® 11 64-bit** (2.4, 5 and 6 GHz) and **Windows® 10 64-bit** 2.4, 5 and 6 GHz).

It is also compatible with **Linux** distributions using the **iwlwifi** driver (kernel **5.10+**); 6 GHz availability depends on regulatory domain and distro enablement.* Bluetooth® 5.2 is supported via the onboard USB interface.

Low Profile design

The adapter supports both **full-height and low-profile** PCI Express slots, making it easy to deploy in compact desktops and IPCs.

Package includes: full-height bracket and **low-profile bracket** for flexible installation.

1.1 Package Contents

Make sure your package contains the following items:

- 1 × WTL-2400AXE Wi-Fi 6E PCIe x1 adapter (full-height bracket pre-installed)
- 1 × Low-profile bracket
- 2 × External antennas
- 1 × Bluetooth® USB header cable (9-pin)
- 1 × QR code sheet

If any of these are missing or damaged, please contact your dealer immediately. If possible, retain the carton including the original packing material, and use it again to repack the product in case there is a need to return it to us for repair.

1.2 Product Features

- Intel® AX210 Wi-Fi 6E 2×2 chipset for performance and reliability
- Tri-band 2.4, 5 and 6 GHz 802.11ax with OFDMA and MU-MIMO for higher efficiency
- Throughput: up to 574 Mbps (2.4 GHz); up to 2400 Mbps (5 and 6 GHz)
- PCI Express x1 interface for Wi-Fi data; USB interface for Bluetooth function
- Bluetooth® 5.2 for seamless connection to headsets, keyboards, mice, etc.
- Two 5 dBi external antennas to enhance signal coverage and stability
- Security-ready with modern Wi-Fi encryption (802.11ax standard compliant)
- Operating temperature 0–55 °C for daily office and SOHO environments
- Windows® 10, Windows® 11 and Linux® driver support for quick integration

1.3 Product Specifications

Product	WTL-2400AXE
Hardware Specifications	
Controller	Intel® AX210
Interface	PCIe 2.0 x1（Wi-Fi via PCIe, Bluetooth via USB）*
Antenna	2 × external 5 dBi
Dimensions (W x D x H)	65 × 44.5 × 1.6 mm
Weight	84g
Power Supply	PCI Express bus-powered (3.3V) USB 5V (internal header) for Bluetooth function No external power connector required
Power Consumption	No Load: 0.33W (3.3V@100mA) Full Load: 0.66W (3.3V@200mA)
Wireless	
Standard	IEEE 802.11ax/ac/n/b/g/a
Bands	2.4 GHz: 2400–2483.5 MHz 5 GHz: 5150–5850 MHz 6 GHz: 5925–7125 MHz
Data Rate	2.4 GHz up to 574 Mbps 5 GHz up to 2400 Mbps 6 GHz up to 2400 Mbps
MIMO	2×2 spatial streams
Bluetooth	
Version	Bluetooth 5.x (via USB interface)
Advanced Functions	
Operating System Support	Windows® 10 (64-bit) Windows® 11 (64-bit) Linux® (64-bit, kernel 5.10+ with iwlwifi & Intel firmware)
Standards Conformance	
Standards Compliance	IEEE 802.11a/b/g (2.4/5 GHz) IEEE 802.11n (HT) IEEE 802.11ac (VHT; up to 80/160 MHz) IEEE 802.11ax (HE; 2.4/5/6 GHz, Wi-Fi 6E) Bluetooth® 5.2 (via internal USB interface) PCI Express x1 (for Wi-Fi interface)

	USB (for Bluetooth function)
Regulatory Compliance	FCC Part 15 Class B, CE
Environment	
Operating Temperature	0 ~ 55 degrees C
Storage Temperature	-10 ~ 70 degrees C
Operating Humidity	5 ~ 90%, relative humidity, non-condensing
Storage Humidity	5 ~ 90%, relative humidity, non-condensing
Standard Accessories	
Package Contents	● 1 × WTL-2400AXE Wi-Fi 6E PCIe x1 adapter (full-height bracket pre-installed) ● 1 × Low-profile bracket ● 2 × External antennas ● 1 × Bluetooth® USB header cable (9-pin) ● 1 × QR code sheet

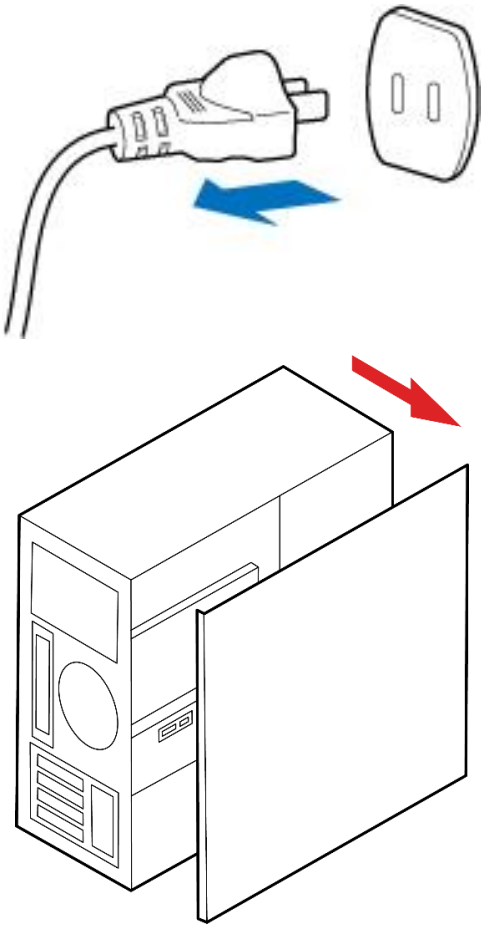
*On certain small-form-factor business desktops with a single chipset-attached (PCH) PCIe slot, PCIe 2.x fallback compatibility may be limited, which can prevent proper detection. We recommend using PCIe 3.0 or newer adapters on such platforms, or a motherboard with a CPU-attached x16 slot.

1.4 System Requirements

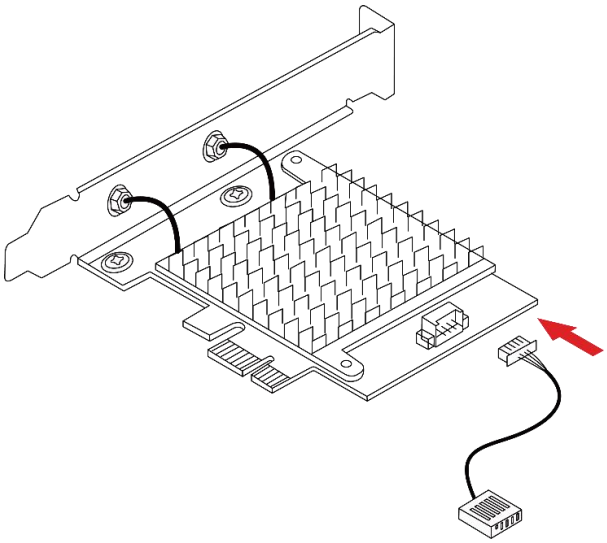
- Windows® 11 (64-bit) — supports Wi-Fi 6E (2.4, 5 and 6 GHz)
- Windows® 10 (64-bit) — supports 2.4 and 5 GHz (6 GHz not supported on Windows 10)
- Linux® (64-bit, kernel 5.10+ with iwlwifi & Intel firmware) — 6 GHz availability depends on OS/distribution and regulatory domain
- One available PCI Express x1 slot (short). Using a PCIe x1 slot is recommended.
- Available internal 9-pin USB (F_USB) header on the motherboard for Bluetooth® function.
- Internet connection for downloading the latest Intel® Wi-Fi and Bluetooth® drivers (if needed).

Chapter 2 Hardware Installation

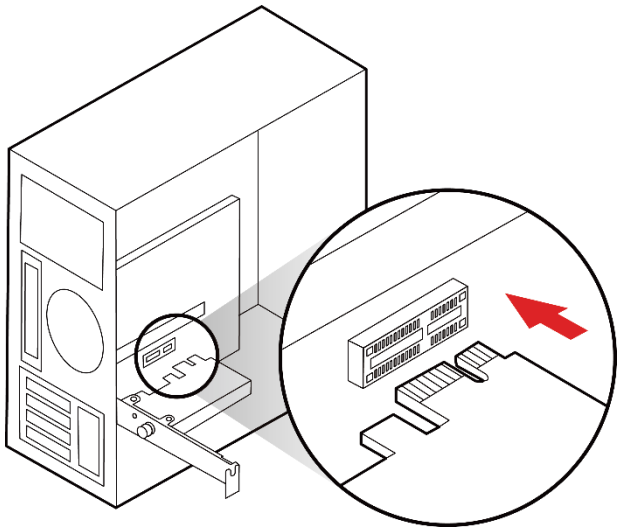
Before you begin: Power off the computer, unplug the power cord, and remove the side cover. Discharge any static electricity by touching a grounded metal object.



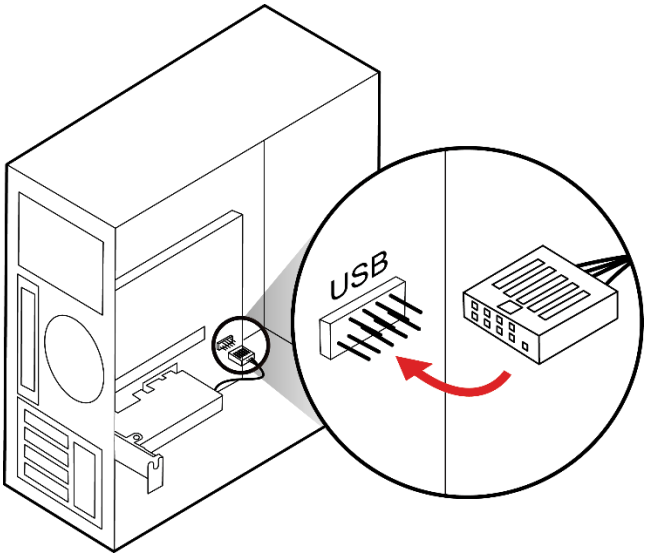
Step 1: Locate the PCI-E slot on the motherboard. Insert the PCI-E network card into the PCI Express x1 (short) slot and make sure it is firmly seated.



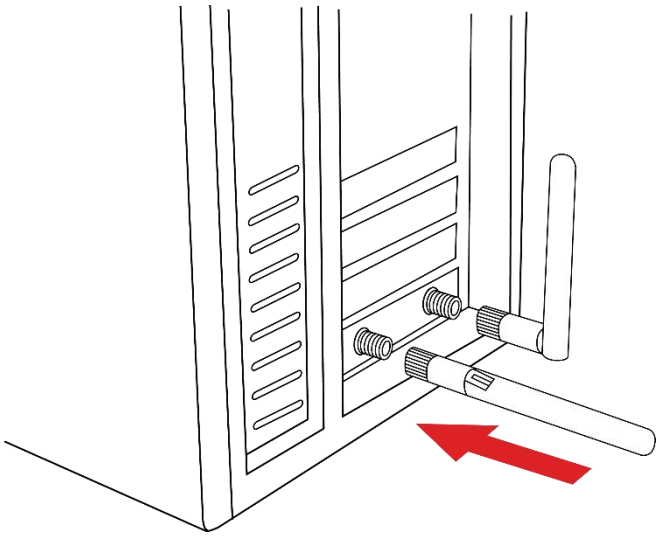
Step 2: Insert the Bluetooth® interface cable into the USB header on the accessory end of the network card. Pay attention to the pin-1 orientation.



Step 3: Connect the other end of the Bluetooth® cable to the motherboard F_USB (front USB) 9-pin header. Ensure correct keying—incorrect insertion will cause Bluetooth to malfunction.



Step 4: Screw the bracket to secure the card. Mount both external antennas to the rear bracket, then adjust to a suitable angle. Handle the adapter by the bracket; avoid touching gold fingers



Step 5: Re-install the side cover, plug in the power cord, and power on the computer.

Chapter 3 Support / Driver Download

Download the latest Intel® drivers or use the bundled package.

a. Wireless network card driver installation

1) Run the Intel® Wireless driver: WiFi_23.160.0_Driver64_Win10_Win11.exe

2) Click “Next”, check “I agree to the license terms and conditions”, choose “Typical”, click “Install”, and wait for completion.

3) Click “Finish” to exit the installer.

b. Bluetooth® driver installation

1) Run the Intel® Bluetooth® driver: BT_23.160.0_64_Win10_Win11.exe

2) Click “Next” in sequence, accept the license agreement, then click “Install”.

3) When installation completes, click “Finish”.

Note: If the adapter is not detected or driver installation is blocked, ensure the card is firmly seated in a PCIe x1 slot and that the Bluetooth® cable is connected to the motherboard F_USB header.

3.1 Driver for the WTL-2400AXE

https://www.planet.com.tw/en/support/downloads?method=keyword&keyword=WTL-2400AXE#list(

3.2 Get the Latest Drivers

• Wi-Fi Driver (Windows 10/11)

• Wireless Bluetooth Driver (Windows 10/11)

• Intel® Driver & Support Assistant (auto-detect)

Tip: In Word, hold Ctrl and click to open links. When exporting to PDF, use File → Export → PDF to preserve clickable hyperlinks.

• Wi-Fi (Windows 10/11): https://www.intel.com/content/www/us/en/download/19351/intel-wireless-wi-fi-drivers-for-windows-10-and-windows-11.html

• Intel® Driver & Support Assistant (auto-detect): https://www.intel.com/support/detect.html

Chapter 4 Connect to a Wi-Fi Network

1) Click the network icon in the Windows taskbar.

2) Select an available SSID in your environment.

3) Choose the 2.4 GHz or 5 GHz network, or a 6 GHz network when using Windows 11 and a Wi-Fi 6E router.

4) Enter the Wi-Fi password and click “Connect”. After connection, you can enjoy high-speed wireless networking.

Chapter 5 Connect Your Bluetooth® Device

Method A (taskbar): Right-click the Bluetooth® icon → “Add a Bluetooth device” → select your device and follow the prompts.

Method B (Settings): Start → Settings → Devices → Bluetooth & other devices → “Add Bluetooth or other device” → Bluetooth → select your device and follow the prompts.

Chapter 6 Troubleshooting

• The driver installs but Windows shows no PCI-E network card detected: Reseat the card into a PCIe x1 slot and tighten the bracket screw; ensure the Bluetooth® cable is connected to the 9-pin F_USB header with correct orientation.

• Wi-Fi 6E (6 GHz) is not listed: 6 GHz requires Windows 11, a Wi-Fi 6E router/AP, and regional approval.

• Slow speed or weak signal: Re-position antennas to a perpendicular “L” shape, avoid obstacles, and use 160 MHz on 5/6 GHz when supported.

• Bluetooth® not working: Verify the internal USB cable is plugged into the adapter and F_USB header; reinstall the Intel® Bluetooth® driver.